The Small-Scale Treatability Study Sample Exemption

BACKGROUND:	**In 1981, the Environmental Protection Agency (EPA) issued an interim final rule that conditionally exempted "waste samples collected solely for the purpose of monitoring or testing to determine their characteristics or composition" from RCRA Subtitle C hazardous waste regulations. This exemption [40 CFR 261.4(d)] applies to the transportation of samples between the generator and testing laboratory, temporary storage of samples at the laboratory prior to and following testing, and storage at a laboratory for specific purposes such as an enforcement action. However, the exclusion did not include large-scale samples used in treatability studies or other testing at pilot plants or other experimental facilities. As a result of comments received by the EPA subsequent to the issuance of the interim final rule, the EPA reopened the comment period on the interim final rule on September 18, 1987, and specifically requested comments on whether or not the sample exclusion should be expanded to include waste samples used in small-scale treatability studies. Almost all responders commented favorably on such a proposal. As a result, the EPA issued a final rule (53 FR 27290, July 19, 1988) conditionally exempting waste samples used in small-scale treatability studies from full regulation under Subtitle C of RCRA. The question of whether or not to extend the exclusion to larger scale studies as proposed by the Hazardous Waste Treatment Council was deferred until a later date. This Information Brief summarizes the requirements of the small-scale treatability exemption.**
STATUTES:	**Resource Conservation and Recovery Act (RCRA).**
REGULATIONS:	**40 CFR 261.4; 40 CFR 260.10; DOE Order 5400.3.**
REFERENCE:	**Environmental Guidance Program RCRA Reference Book.**

What is a treatability study?

A treatability study (40 CFR 260.10) is a study in which a hazardous waste is subjected to a physical, chemical, biological, or thermal treatment process to determine:

- ❑ whether the waste is amendable to the treatment process;
- ❑ what pretreatment (if any) is required;
- ❑ the optimal process conditions needed to achieve the desired treatment;
- ❑ the efficiency of a treatment process for a specific waste or wastes; or
- ❑ the volumes and characteristics of residuals resulting from various treatment processes.

This definition also includes liner compatibility, corrosion, and other material compatibility studies as well as toxicological and health effect studies. A treatability study ***is not*** a means to commercially treat or dispose of hazardous wastes. Treatability studies cannot involve the placement of hazardous wastes on the land or the open burning of such wastes [40 CFR 261.4(f)(6)].

What is the small-scale treatability studies sample exemption?

The Treatability Study Exemption, 40 CFR 261.4(e-f), provides that persons who generate or collect samples of hazardous waste at hazardous waste management facilities, or as a result of RCRA corrective action or CERCLA remedial action, for the purpose of conducting treatability studies, as defined in 40 CFR 260.10 ("Definitions"), are not subject to any requirement of 40 CFR Parts 261 ("Identification and listing of hazardous waste"), 262 ("Standards applicable to generators of hazardous waste"), and 263 ("Standards applicable to transporters of hazardous waste") or to the notification requirements of Sect. 3010 of RCRA ("Preliminary notification"). These samples are also not included in the quantity determinations of 40 CFR 261.5 ("Special requirements for hazardous waste generated by conditionally exempt small quantity generators") and 40 CFR 262.34(d) ("Accumulation time") when the sample is collected, prepared, stored (prior to shipment to the laboratory or testing facility), or being transported to the laboratory or testing facility for the purpose of conducting a treatability study, provided that the requirements of 40 CFR 261.4(e-f) outlined below are satisfied. The exemption would also apply to the return of untreated samples and treatment residues to the generator provided they are returned within 90 days of completion of the treatability study or within one year from the date of shipment by the generator, whichever comes first.

The regulations state that the sample must be shipped to a laboratory or testing facility that is either exempt under 40 CFR 261.4(f), has an appropriate RCRA permit, or is an interim status facility [40 CFR 261.4(e)(2)(iv)]. Laboratories and testing facilities conducting treatability studies (to the extent such facilities are not otherwise subject to RCRA requirements) are not subject to any requirements of 40 CFR 124 ("Procedures for decisionmaking"), Parts 261-263, 264 ("Standards for owners and operators of hazardous waste treatment, storage, and disposal facilities"), 265 ("Interim status standards for owners and operators of hazardous waste treatment, storage, and disposal facilities"), 266 ("Standards for the management of specific hazardous wastes and specific types of hazardous waste management facilities"), 268 ("Land disposal restrictions"), and 270 ("EPA administered permit programs: the hazardous waste permit program"), or to the notification requirements of Sect. 3010 of RCRA provided the conditions of 40 CFR 261.4(f)(1-11) are met. It should be noted that a mobile treatment unit (MTU) may qualify as a testing facility subject to the requirements of 40 CFR 261.4(f)(1-11). Where a group of MTUs are located at the same site, these requirements apply collectively to the entire group of MTUs as if the group were one MTU.

What are the limits on the quantity of waste exempted?

The 40 CFR 261 regulations limit the amount of waste per waste stream eligible for the exemption. For each process or technology being evaluated (for each generated waste stream) up to, but not exceeding, 1000 kg of non-acute hazardous waste, including contaminated soil, water, or debris; or 1 kg of acute hazardous waste; or 250 kg of soils, water, or debris contaminated by acute hazardous waste [40 CFR 261.4(e)(2)(i)]

will be subject to the exemption. Approval to exceed (up to an additional 500 kg of non-acute hazardous waste, 1 kg of acute hazardous waste, or 250 kg of soils, etc.) the waste stream limits may be granted by the Regional Administrator in cases where it can be demonstrated that an additional quantity of hazardous waste is needed to complete the study because:

- ❑ of equipment failure during the treatability study,
- ❑ there is a need validate the results of a previous study,
- ❑ there is a need to evaluate alternative techniques within a previously evaluated treatment process, or
- ❑ there is a need to determine final specifications for treatment [40 CFR 261.4(e)(3)].

What are the limits on the quantity of waste which can be shipped to a laboratory or testing facility?

A single sample shipment of wastes under the exemption is limited to no more than 1000 kg of non-acute hazardous waste, including contaminated soil, water, or debris; 1 kg of acute hazardous waste; or 250 kg of soils, water, or debris contaminated with acute hazardous wastes [40 CFR 261.4(e)(2)(ii)].

Are there special packaging and handling requirements for shipment of samples to a laboratory or testing facility?

Samples must be packaged so that they do not leak, spill, or vaporize during shipment, and the shipment of the sample must comply with applicable shipping requirements of the Department of Transportation (DOT) and the U.S. Postal Service (USPS) [40 CFR 261.4(e)(2)(iii)(A)]. If DOT and USPS requirements do not apply, then the sample must be accompanied by information on the name, mailing address, telephone number of the originator of the sample and of the facility receiving the sample, a description of the sample (including its EPA Hazardous Waste Nos.) and the quantity of the sample being shipped, and the date of shipment [40 CFR 261.4(e)(2)(iii)(B)].

How much waste can be treated per day under the exemption?

No more than a total of 250 kg of "as received" waste can be subjected to the initiation of treatment in all treatability studies in any single day for an entire laboratory or testing facility. "As received waste" refers to the waste received in the shipment from the generator or sample collector [40 CFR 261.4(f)(3)].

Is there a limit on the amount of "as received" hazardous waste that can be stored at a laboratory or testing facility?

The quantity of "as received" hazardous waste which may be stored at a facility for the purpose of evaluation in treatability studies must not exceed 1000 kg, the total of which can include 500 kg of soils, water, or debris contaminated with acute hazardous waste, or 1 kg of acute hazardous waste [40 CFR 261.4(f)(4)]. The limitation on quantities of waste which can be stored ***does not*** include treatability study residues or treatment materials added to "as received" hazardous wastes.

How long can wastes be stored at a laboratory or testing facility?

Untreated samples, or residues generated during the treatability study, must be returned to the generator within 90 days of completion of the treatability study, or within 1 year from the date of shipment by the generator to the laboratory or testing facility, whichever date occurs first [40 CFR 261.4(f)(5)]. If the time limits are exceeded, samples or residues must be managed as a RCRA hazardous waste (unless it is no longer hazardous). Untreated samples, or treatment residues exhibiting a hazardous waste characteristic, or containing listed hazardous wastes destined for disposal would be subject to the full RCRA requirements for proper disposal of hazardous waste.

What are the reporting and recordkeeping requirements?

For a period ending three years following the completion of the treatability study, the generator or sample collector must maintain copies of shipping and other documentation showing the amount of wastes shipped under the exemption; the name, address, and EPA identification number of the laboratory or testing facility that received the waste; the date the shipment was made; and whether or not unused samples and residues were returned to the generator [40 CFR 261.4(e)(2)(v)]. Additionally, the generator must maintain a copy of the contract between the generator and facility conducting the treatability study for three years.

Owners and operators of a facility conducting a treatability study must notify the EPA, or authorized state by letter of the intent to conduct treatability studies at least 45 days prior to conducting such studies [40 CFR 261.4(f)(1)]. The facility must have or obtain an EPA identification number and maintain records that show compliance with the treatment rate, storage time, and quantity limits for three years following completion of each study [40 CFR 261.4(f)(7)]. Additionally, information must be maintained by the facility regarding (1) the name, address, and EPA identification number of the generator or sample collector; (2) the date the shipment was received; (3) the quantity of waste accepted; (4) the quantity of "as received" waste in storage each day; (5) the date the treatment study was initiated and the amount of "as received" waste introduced to treatment each day; (6) information on the quantities and dates that waste materials were received, stored, and tested; and (7) the date that unused samples and residues were returned to the generator, or if sent to a designated facility, the name of the facility and its EPA identification number [40 CFR 261.4(f)(7)(i-vii)]. The facility must also maintain a copy of all contract and shipping papers associated with the transport of treatability samples to and from the facility for a minimum of three years following the completion date for the study [40 CFR 261.4(f)(8)].

The laboratory or facility must also submit to the Regional Administrator an annual estimate, due by March 15 of each year, of the number of treatability studies, along with an estimate of the amount of waste to be used during that year [40 CFR 261.4(f)(9)]. The annual report must contain information pertaining to the quantities and types of wastes being tested and in storage, for whom the tests were conducted, the dates the studies were conducted, and the final disposition of untreated samples and treatment residues. If unused samples or treatment residues are not returned to the generator or originator, then the laboratory or facility must determine if those materials are hazardous wastes under 40 CFR 261.3 (Definition of hazardous waste) and subject to 40 CFR Parts 261-268 and 270 [40 CFR 261.4(f)(10)]. Finally, the laboratory or testing facility must notify the Regional Administrator by letter when the facility is no longer planning to conduct treatability studies at the site [40 CFR 261.4(f)(11)].

Questions of policy or questions requiring policy decisions will not be dealt with in EH-231 Information Briefs unless that policy has already been established through appropriate documentation. Please refer any questions concerning the subject material covered in this Information Brief to Jerry Coalgate, RCRA/CERCLA Division, EH-231, 202-586-6075.